Artificial intelligence for supply chain resilience: learning from Covid-19

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Abstract

PurposeMany supply chains have faced disruption during Covid-19. Artificial intelligence (AI) is one mechanism that can be used to improve supply chain resilience by developing business continuity capabilities. This study examines how firms employ AI and consider the opportunities for AI to enhance supply chain resilience by developing visibility, risk, sourcing and distribution capabilities.Design/methodology/approachThe authors have gathered rich data by conducting semistructured interviews with 35 experts from the e-commerce supply chain. The authors have adopted a systematic approach of coding using open, axial and selective methods to map and identify the themes that represent the critical elements of AI-enabled supply chain resilience.FindingsThe results of the study highlight the emergence of five critical areas where AI can contribute to enhanced supply chain resilience; (1) transparency, (2) ensuring last-mile delivery, (3) offering personalized solutions to both upstream and downstream supply chain stakeholders, (4) minimizing the impact of disruption and (5) facilitating an agile procurement strategy.Research limitations/implicationsThe study offers interesting implications for bridging the theory–practice gap by drawing on contemporary empirical data to demonstrate how enhancing dynamic capabilities via AI technologies further strengthens supply chain resilience. The study also offers suggestions for utilizing the findings and proposes a framework to strengthen supply chain resilience through AI.Originality/valueThe study presents the dynamic capabilities for supply chain resilience through the employment of AI. AI can contribute to readying supply chains to reduce their risk of disruption through enhanced resilience.